

Applicants respectfully submit that the finality of the December 4, 2002 Office Action is improper. Following the first Office Action, claim 1 was amended only to include the limitations of dependent claim 2, which was concurrently canceled. The December 4, 2002 Office Action newly rejected amended claim 1 over Yamada. This rejection was tantamount to a new ground of original claim 2, and therefore was not necessitated by the amendment. Because this new ground of rejection was not necessitated by amendment, the second Office Action should not have been made final. *See* M.P.E.P. § 706.07(a). Applicants note with appreciation that during the February 26, 2003 interview, Examiner Fortuna agreed to withdraw the finality of the December 4, 2002 Office Action.

Claims 1, 3-8, and 11-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamada et al., JP 09111692 (“Yamada”). This rejection is respectfully traversed.

Yamada is cited as describing a size emulsion comprising alkenyl succinic anhydride emulsified with a starch grafted acrylamide co-polymer. According to Yamada, the ampholytic-ink grafted cationic starch is produced by graft-polymerization of a (meth)acrylamide monomer, a cationic vinyl monomer, and an anionic vinyl monomer to a cationized starch. As the Final Office Action concedes, Yamada does not describe mixing the ASA with a surfactant prior to emulsification, as claimed in claim 1. The Final Office Action asserts that it would have been obvious to have used a surfactant “to help in the emulsification process” of Yamada. Applicants respectfully, but strenuously disagree with this assertion.

Not only does Yamada not disclose the use of a surfactant, as the Final Office Action concedes, but Yamada discloses that the dispersing agent is specifically formulated to avoid the need for a surfactant (“excellent emulsion dispersion stability and sizing effect without using a surfactant”). Thus, Yamada teaches away from using a surfactant with the disclosed grafted cationic starch. Given that a specific object of Yamada is to avoid the need for and use of a surfactant, the Final Office Action provides no rationale why a person of ordinary skill nevertheless would have used a surfactant in the Yamada composition.

The inventors have discovered that the ASA size emulsion prepared in accordance with the present invention exhibits more than 24 hours of stability, even up to 7 days or more of stability. In addition, it has been found that the starch grafted co-polymer is a more economical emulsification agent for ASA size, enabling the use of less emulsification agent to emulsify ASA size (see specification, page 2, lines 6-12). Neither Yamada nor the other cited documents describes or suggests the particular process set forth in independent claim 1.

Although Applicants respectfully disagree that Yamada suggests using a surfactant, in an effort to advance prosecution, claim 1 has been amended to recite the amount of surfactant used, as requested by Examiner Fortuna during the February 26, 2003 interview. By the foregoing amendment, claim 1 has been amended to specify that the ASA is mixed with from about 0.1 to about 5 parts of surfactant per 100 parts by weight of ASA. It is respectfully submitted that amended claim 1 yet further distinguishes Yamada.

Applicants respectfully submit that dependent claims 3-10 are allowable for at least the same reasons as argued above with respect to independent claim 1.

Independent claim 11 specifies that the starch grafted cationic co-polymer comprises a reaction product of starch, acrylamide, and a diallyldialkyl ammonium halide. Dependent claim 19 further specifies that the diallyldialkyl ammonium halide is diallyldimethyl ammonium chloride. None of the cited documents describes or suggests the particular starch grafted cationic co-polymer of claim 11 or claim 19.

The Final Office Action asserts that the particular starch grafted cationic co-polymer of claims 11-19 are “well known and recognized by the art” and admitted as such in the specification. Applicants respectfully disagree with this unsupported assertion, and particularly disagree that the specification admits that the particular starch grafted cationic co-polymers claimed in claims 11-19 are known in the art.

The Final Office Action has failed to make a *prima facie* case of unpatentability. It is incumbent on the USPTO to set forth substantial evidence in support of questions of fact in a prior art rejection. *In re Lee*, 277 F.3d 1338, 61 USPQ2d 1430 (Fed. Cir. 2002) (reversing USPTO rejection which relied on “common knowledge” and “common sense” of person of ordinary skill); *In re Kotzab*, 217 F.3d 1365, 55 USPQ2d 1313 (Fed. Cir. 2000). The Final Office Action fails to cite any evidence, let alone substantial evidence in support of its assertion that the claimed starch grafted co-polymers are well known in the art. Applicants respectfully submit that the rejection of independent claim 11 is facially defective and should be withdrawn.

Applicants note with appreciation that during the February 26, 2003 interview, Examiner Fortuna agreed that neither Yamada nor any of the remaining art of record

describes or suggests the particular starch grafted co-polymer as claimed in independent claim 11.

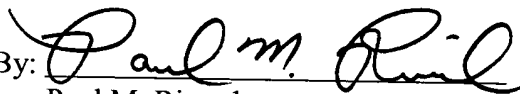
Dependent claims 12 and 13 specify that the alkenyl succinic anhydride is mixed with a surfactant prior to forming the emulsion. As argued above with respect to independent claim 1, Yamada teaches away from using a surfactant. Thus, dependent claims 12 and 13 not only are patentable for the same reasons as argued above with respect to independent claim 11, but these claims yet further distinguish Yamada by calling for a surfactant – from which Yamada teaches away.

It is respectfully submitted that dependent claims 14-18 are allowable for at least the same reasons as argued above with respect to independent claim 11.

CONCLUSION

In view of the foregoing, reconsideration and withdrawal of the § 103 rejection over Yamada and allowance of the subject application are respectfully requested.

Respectfully submitted,
BANNER & WITCOFF, LTD.

By: 
Paul M. Rivard
Registration No. 43,446

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Eleventh Floor
1001 G Street, N.W.
Washington, DC 20001-4597
(202) 824-3000 (main)
(202) 824-3001 (facsimile)

Customer No. 22907

VERSION WITH MARKINGS TO SHOW CHANGES MADE

1. (twice amended) A process of emulsifying alkenyl succinic anhydride size comprising blending an alkenyl succinic anhydride and a starch grafted cationic acrylamide copolymer under conditions sufficient to form an emulsion, wherein said alkenyl succinic anhydride is mixed with from about 0.1 to about 5 parts of a surfactant per 100 parts by weight of alkenyl succinic anhydride prior to forming said emulsion.

3. (amended) The process of claim ~~2~~1 wherein said surfactant is sodium dioctyl sulfosuccinate.